IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT:	KARL GARTLAND, ET AL.	)
		) Before the
		) Board of
SERIAL NUMBER:	10/678,822	) Appeals
		)
FILED:	OCTOBER 2, 2003	)
		) Appeal No.
FOR:	METHOD AND SYSTEM FOR	)
	AUTOMATING ISSUE RESOLUTION	)
	IN MANUFACTURING EXECUTION	)
	AND MATERIAL CONTROL SYSTEMS	)
		)

Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

A Petition for Extension of Time (4 months) is filed herewith. This Appeal Brief is submitted in response to a Notice of Panel Decision dated February 16, 2007.

THE REAL PARTY IN INTEREST

The real party in interest in this appeal is International Business Machines, Inc. Ownership by International Business Machines, Inc. is established by assignment document recorded for this application on October 2, 2003 on Reel 014582, Frame 0695.

RELATED APPEALS AND INTERFERENCES

Appellants know of no related patent applications or patents under appeal or interference proceeding.

STATUS OF CLAIMS

Claims 1-30 are pending. Claims 1-30 stand rejected under 35 U.S.C. § 102(e). The rejections of claims 1-30 are herein appealed.

STATUS OF AMENDMENTS

There have been no amendments filed subsequent to receipt of the final office action.

SUMMARY OF CLAIMED SUBJECT MATTER

A concise explanation of the subject matter defined in each of the independent claims 1, 11, 21 and 30 involved in the appeal is provided below:

Claim 1

Claim 1 recites "an automated manufacturing facility for running automatic production and having a plurality of pieces of automated equipment designed to carry out certain tasks and having interactive control systems, an automated issue resolution (ISR) system for automatically attempting to resolve identified issues that interfere with automatic production" (Figure 1, system 120; paragraph [0044]; Figure 6; paragraph [0088]; Figure 7).

The ISR system comprising "an automated issue resolution management (ISRM) system for directing attempts to automatically resolve issues including error conditions relating to the automated manufacturing facility, the ISRM system including a plurality of automated components whose operations the ISRM system is operable to coordinate" (Figure 1, subsystem 122; paragraph [0044]; Figure 7, 122'; paragraph [0054]; error codes in Table 4, paragraph [0065]).

The components including "a first component for automatically checking whether a first reported issue brought to its attention is a recognized issue for which an automatic resolution appears to be available" (paragraph [0046]; paragraph [0081]; Figure 5, step 540).

The components also including "a second component for commanding the taking of automated corrective action by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component" (paragraph [0046]; paragraph [0081]; Figure 5, step 540; corrective actions stated in paragraphs [0083]-[0085]).

Claim 11

Claim 11 recites "an automated manufacturing facility having interactive control systems which interface with pieces of automated equipment that carry out certain assigned tasks, an automated issue resolution (ISR) system for automatically attempting to resolve identified issues that interfere with automatic production" (Figure 1, automated factory system 30; paragraphs [0038]-[0043] describe system components of automated equipment; paragraph [0044] describes ISR system 120 including subcomponents "*interconnected as needed to the rest of the factory automation system 30*").

The ISR system comprising "a first component for automatically checking whether a first issue reported to its attention is a recognized issue for which an automatic resolution appears to be available" (paragraph [0046]; paragraph [0081]; Figure 5, step 540).

The IRS system also comprising "a second component for automatically commanding the taking of automated corrective action by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component" (paragraph [0046]; paragraph [0081]; Figure 5, step 540; corrective actions stated in paragraphs [0083]-[0085]).

Claim 21

Claim 21 recites "[a]n automated method of managing automatic recoveries from error conditions in an automated factory environment that has automated computerized control systems which control and supervise the operations of automated equipment therein" (Figure 1, automated factory system 30; paragraphs [0038]-[0043] describe system components of automated equipment; Figure 5, flow diagram).

The method comprising "(a) installing a supervisory program for managing attempts to recover automatically from selected error conditions reported by at least one of the control systems in the automated factory" (Figure 1, host system 32;

paragraph [0038]; paragraph [0044] describes ISR system 120 including subcomponents "interconnected as needed to the rest of the factory automation system 30; ISR software, paragraph [0079]; Figure 6, ISR program 605; paragraph [0089]).

The method also comprising "(b) determining whether incoming error conditions received by the supervisory program are recognized as issues for which an automatic resolution appears to be available" (paragraph [0046]; paragraph [0081]; Figure 5, step 540; Figure 6; paragraphs [0090]-[0091]).

The method further comprising "(c) for the first incoming error condition that is so recognized in step (b), under the auspices of the supervisory program, accessing information associated with the incoming recognized error condition to enable the generation of a first set of automated corrective commands" (Figure 6; list 675; paragraph [0091]).

The method also comprising "(d) under the auspices of the supervisory program, generating at least a first command for automated corrective action to be taken by a portion of the automated factory in an effort to resolve automatically the first recognized incoming error condition" (paragraph [0046]; paragraph [0081]; Figure 5, step 540; corrective actions stated in paragraphs [0083]-[0085]).

Claim 30

Claim 30 recites "[a] computer program product, to be used in an automated factory environment that has automated computerized control systems which control and supervise the operations of the factory and pieces of automated equipment therein, for implementing an automated method for managing automatic recoveries from error conditions" (paragraph [0122]; Figure 1, automated factory system 30; paragraphs [0038]-[0043] describe system components of automated equipment; Figure 5, flow diagram).

The software product comprising "a storage medium readable by at least one processing circuit and storing instructions for execution by the processing circuit for performing the method" (paragraph [0122]).

The method comprising "(a) installing a supervisory program for managing attempts to recover automatically from selected error conditions reported by at least one of the control systems in the automated factory" (Figure 1, host system 32; paragraph [0038]; paragraph [0044] describes ISR system 120 including subcomponents "interconnected as needed to the rest of the factory automation system 30; ISR software, paragraph [0079]; Figure 6, ISR program 605; paragraph [0089]).

The method also comprising: "(b) determining whether incoming error conditions received by the supervisory program are recognized as issues for which an automatic resolution appears to be available" (paragraph [0046]; paragraph [0081]; Figure 5, step 540; Figure 6; paragraphs [0090]-[0091]).

The method further comprising "(c) for the first incoming error condition that is so recognized in step (b), under the auspices of the supervisory program, accessing information associated with the incoming recognized error condition to enable the generation of a first set of automated corrective commands" (Figure 6; list 675; paragraph [0091]).

The method also comprising "(d) under the auspices of the supervisory program, generating at least a first command for automated corrective action to be taken by a portion of the automated factory in an effort to resolve automatically the first recognized incoming error condition" (paragraph [0046]; paragraph [0081]; Figure 5, step 540; corrective actions stated in paragraphs [0083]-[0085]).

The above exemplary embodiments are discussed with respect tot eh aforementioned independent claims by way of example only and are not intended to in any way limit the scope of these claims.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-30 have been rejected as being allegedly anticipated by Ikeda et al. The rejections of claims 1-30 as being allegedly anticipated by Ikeda et al. are to be reviewed on appeal.

ARGUMENT

Claims 1-30 have been rejected as being allegedly anticipated by Ikeda et al.

With respect to claim 1, the Examiner asserts Ikeda et al. disclose ***"[I]n an automated manufacturing facility*** for running ***automatic production*** and having a plurality of pieces of automated equipment designed to carry out certain tasks and having interactive control systems, an automated issue resolution (ISR) system for ***automatically attempting to resolve identified issues*** that interfere with automatic production, the ISR system comprising: an ***automated issue resolution management (ISRM) system*** for directing attempts to ***automatically resolve issues including error conditions relating to the automated manufacturing facility***, the ISRM system including a plurality of automated components whose operations the ISRM system is operable to coordinate" (emphasis added), citing column 1, lines 52-57 in support. In the Final Office Action (page 3), the Examiner equates the ***operation status of a power plant*** disclosed in Ikeda et al. with a production manufacturing facility as recited in the Appellants' claims. The Examiner then argues this interpretation is reasonable in light of the supporting disclosure. However, Ikeda et al. is directed to remote diagnostics for power plants, an entirely different and non-analogous industry from the production manufacturing facility. It should be noted that one does not "manufacture" power, but rather, power may be generated for use in manufacturing. Thus, there exists clear error in the rejection of claim 1.

In addition, Ikeda et al. do not teach "an automated manufacturing facility," rather Ikeda et al. teaches a ***remote monitoring*** diagnostic center, a user facility containing a ***power plant***, and a design department. The power plant and remote diagnostic center of Ikeda et al. are ***geographically diverse facilities***. The "remote" of "remote monitoring diagnostic center" is the essence of Ikeda et al., providing power plant monitoring at a distance. For example, Ikeda et al. states a "remote area (**a long distance** from the power generating equipment to the maintenance group)" (Ikeda et al., column 9, lines 45-47). "Information which can be monitored is converted into digitalized signals, and is **transmitted** through the communications line (ISDN line, Internet, Intranet, radio) **to the facilities** where monitor and diagnosis are conducted on a real time basis by remote control." (Ikeda et al., column 9, lines 60-65). A stated advantage of Ikeda et al. is, "[s]imultaneous monitoring of multiple equipment by a smaller number of people in remote control mode" (Ikeda et al., col. 11, lines 17-18), indicating both ***human involvement and remote location***. Thus, Ikeda et al. does not teach "an automated manufacturing facility." Even, if the Examiner reads the power plant of Ikeda et al. as an automated manufacturing facility, in contrast to the teaching of the specification, **the remote monitoring diagnostic system is not in the plant**. Therefore, the structure taught in Ikeda et al. is inconsistent with the plain language of the Claims.

In interpreting the claims, the Examiner has ignored the teaching and term definitions provided in the specification. Specifically, the Examiner is encouraged to review paragraph [0124], which *inter alia* states: "The term 'automated factory' and 'automated manufacturing facility' should be understood in a broad sense to encompass any factory or facility including a testing facility, warehouse and distribution center where automated equipment, **directed by automatic control systems with little or no human intervention**, is employed to receive, make, assemble, process, refine, route, sort, test, package and/or in whole or in part on a repetitive basis like physical items or material" (Emphasis added). Therefore, it is inconsistent with the specification to read the determination of corrective actions in Ikeda et al., which require human intervention, as "automatic" or "automated" in reference to the claims of the instant application. The same arguments advanced above with respect to claim 1 also apply to claims 11, 21, and 30.

Further, Ikeda et al. is entirely devoid of teaching "an automated issue resolution (ISR) system for ***automatically attempting to resolve identified issues*** that interfere with automatic production, the components including a first component for automatically checking whether a first reported issue brought to its attention is a recognized issue for which an automatic resolution appears to be available; and a second component for commanding the taking of automated corrective action by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component."

Regarding Examiner's response for the first component of claims 1, 11, 21, and 30 on page 9 of the Final Office Action, the Examiner appears to misunderstand Appellants' previously presented argument. The Examiner is correct that the claims do not include databases or "silent", but Appellants made no assertion to the contrary.

However, the Examiner's contention that Ikeda et al. at column 1, lines 45-57 discloses "automatic action" is without support. The only references to "action" are a database storing errors and actions, and a reporting system with no teaching of automatic capabilities.

Regarding Examiner's response for the second component of claims 1, 11, 21, and 30, the Examiner overextends reason in stating that sending a report, even if sent via e-mail, is equivalent to "commanding the taking of ***automated corrective action*** by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component" as recited in the claims. The reporting system of Ikeda et al. ***requires human intervention of the pilot staff*** to confirm the error and either pass the information to a department for study or provide feedback directly through e-mail, phone, or fax. (Ikeda et al., col. 8, lines 49 – 60). Furthermore, there is nothing to indicate that the user recipient of the report performs the correction in an automated fashion. Ikeda et al. teaches power plant maintenance using a maintenance engineer with a portable terminal (Ikeda et al., Figures 1- 4, item 24).

The Examiner further argues that full latitude is given to interpret each claim in the broadest reasonable sense is given to the term "automation." The Examiner then equates the reporting activities ("either pass the information to a department for study or provide feedback directly through e-mail, phone, or fax") disclosed in Ikeda et al. with automated corrective activities recited in the Appellants' claims. Automation is defined as:

> Automatic, as opposed to human, operation or control of a process, equipment or a system; or the techniques and equipment used to achieve this. Most often applied to computer (or at least electronic) control of a manufacturing process. *The Free On-line Dictionary of Computing*. Denis Howe. 16 Jul. 2007. <Dictionary.com http://dictionary.reference.com/browse/automation>.

On page 10, of the Final Office Action, the Examiner states column 1, lines 52-57, and column 6, lines 58-67 as allegedly teaching this automated corrective action feature. Appellants once again respectfully disagree with this analysis because the cited sections disclose a system that merely ***passes along an occurrence of an***

error. This action is simply 'reporting', not corrective action. Further, Ikeda et al. discloses, specifically in cited column 6, lines 58-67, that an occurrence of an error is passed along to the technical staff, then to the designing department, which then does an analysis and then takes an action. This action, which involves human intervention, is clearly not automated. In contrast, Appellants' claimed invention discloses "a second component *for commanding the taking of automated* ***corrective*** *action* by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component". In contrast to Ikeda et al., there is no deliberation among departments in handling the occurrence of an error: Appellants' second component *automatically* takes corrective action.

Claims 2-10, 12-20, and 22-29 should be patentable as depending from what should be allowable independent claims, 1, 11, and 21, respectively.

Claims 2, 12, and 22 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 2, 12 and 22 "the ISRM system further includes: a third component for determining whether the automated corrective action appears to have resolved the recognized issue; and a fourth component for logging whether the automated corrective action appears to have resolved the recognized issue." The Examiner cites Figure 5(A); Ref. S18-20; column 7, lines 2-6 in support of this rejection. However, in the Final Office Action, the Examiner cites sending a report to a user as ***both*** of the second component of claims 1, 11, 21, and 30, and as the third component of claims 2, 12, and 22. Such analysis is well beyond the scope of the broadest ***reasonable*** interpretation. Regarding the fourth component of claims 2, 12, and 22, Ikeda et al. discloses logging the study results without regard as to whether the automated corrective action appears to have resolved the recognized issue. For at least these reasons, claims 2, 12, and 22 patentably define over Ikeda et al.

Claims 4, 14, and 24 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 4, 14, and 24 recite "the second subcomponent of second component is operatively arranged for advising via a first message that an automated corrective action cannot be taken because of a condition specifically identified in the first message." The Examiner cites column 6, lines 37-41 in support of this rejection. However, Regarding Examiner's response for claims 4, 14, and 24, Ikeda et al. states that the design department study results are sent to the user. Further, Ikeda et al. is entirely devoid of teaching a first message. For at least these reasons, claims 4, 14, and 24 patentably define over Ikeda et al.

Claims 5 and 15 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 5 and 15 recite "the second subcomponent of the second component is operatively arranged for advising via a second message that an automated corrective action cannot be taken because of at least one piece of automated equipment identified in the second message is not in automatic mode." The Examiner cites column 6, lines 37-41 in support of this rejection. However, Regarding Examiner's response for claims 5 and 15, Ikeda et al. states that the design department study results are sent to the user. Ikeda et al. does not teach a first and second message. Furthermore, there is no mention of a message indicating that at least one piece of automated equipment is not in automatic mode. For at least these reasons, claims 5 and 15 patentably define over Ikeda et al.

Claim 6 should also be allowable as setting forth patentable subject matter in and of itself. Claim 6 recites "the ISRM system further includes at least a plurality of second components which are each respectively dedicated to attempting to resolve of a different recognized issue." The Examiner cites column 8, lines 52-58 in support of this rejection. However, the monitoring system 8 of Ikeda et al. referred to by the Examiner at Col. 8, lines 7-10, is monitoring performed at the power plant facility, which is a ***separate*** facility from the monitoring center 15 of Ikeda et al., and as such is inconsistent with the Claim. For at least these reasons, claim 6 patentably defines over Ikeda et al.

Claims 7 and 17 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 7 and 17 recite "the second component of the ISRM system further includes a first subcomponent for providing at least first and second courses of possible automated corrective action, and a second subcomponent for commanding the taking of the first course of possible automated corrective action, and then the taking of the second course of possible automated corrective action if needed." The Examiner cites column 6, lines 53-57; Figure 5(A); Ref. 70, 71; column 8, lines 1-10) in support of this rejection. The databases of Ikeda et al. may be hierarchical; however, the contents and structure of the databases are not disclosed. Even if Ikeda et al.'s databases were organized in a hierarchy, that mere point would not anticipate claims 7 and 17. There is no disclosure in Ikeda et al. that would lead a PHOSITA to conclude that Ikeda et al.'s similar error database 70 and component history database 71 contain at least first and second courses of possible automated corrective action and commanding the taking of the first course of possible automated corrective action, and then the taking of the second course of possible automated corrective action if needed. For at least these reasons, claims 7 and 17 patentably define over Ikeda et al.

Claims 8, 18, and 28 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 8, 18, and 28 recite "a third component for determining whether the automated corrective action that was commanded appears to have resolved the recognized issue; and wherein the third component includes a first subcomponent for providing a first message indicating whether the commanded automated corrective action appears to have resolved the issue, and the second component includes a first subcomponent for providing at least first and second possible automated corrective actions, and a second subcomponent for commanding the taking of the first possible automated corrective action, and then commanding the taking of the second possible automated corrective action if needed, and a third subcomponent for receiving the first message provided by third component and deciding whether the second subcomponent needs to command the taking of the second possible automated corrective action." The Examiner cites Figure 5(A); Ref. S18-20; column 7, lines 2-6; column 6, lines 53-57; Ref. 70, 71; column 8, lines 1-10 in support of this rejection. However, Ikeda et al.'s third subcomponent of the second component (Ikeda et al., Col. 8, lines 1 – 10) refers to the monitoring system 8 of Figures 1-4, which is part of the field monitoring system 6 of the power plant 4 at the user facility 1. As such, the monitoring system 8 is not a subcomponent of the monitoring system 19, the monitoring center 15, or the remote monitoring diagnostic center 14. Therefore, Ikeda et al. cannot anticipate Claims 8, 18, and 28. For at least these reasons, claims 8, 18, and 28 patentably define over Ikeda et al.

Claims 9, 19, and 29 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 9, 19, and 29 recite "issue resolution system as in Claim 8, wherein the ISRM system further includes: at least a plurality of second components as set forth above, but with each being dedicated to attempting to resolve a distinct recognized issue; and a command memory for providing information pertinent to possible corrective actions with respect to at least a plurality of distinct recognized issues; and a command sequencer for helping generate at least first and second commands to initiate automated corrective actions in sequence as needed." The Examiner cites column 8, lines 52-58; column 8, line 65 through column 9, line 2 in support of this rejection. However, contrary to the Examiner's assertion, it is unreasonable to interpret "automated" as manual effort, as manual effort of the technical staff in Ikeda et al. ***is the exact opposite of automated***. Furthermore, as previously mentioned, the specification does define the terms "automated factory" and "automated manufacturing facility", which should aid Examiner in a more appropriate interpretation of the word "automated." For at least these reasons, claims 9, 19, and 29 patentably define over Ikeda et al.

Claims 10 and 20 should also be allowable as setting forth patentable subject matter in and of themselves. Claims 10 and 20 recite "issue resolution system as in Claim 8, wherein the ISRM system further comprising: a fourth component for logging for future reference whether an automated corrective action that was commanded appears to have resolved the recognized issue; a fifth component for providing a message indicating which automated corrective action that was commanded appears to have resolved the recognized issue; and a sixth component, operatively arranged to receive a message from the fifth component, for logging for future reference at least part of the information contained in such received message."

The Examiner cites column 7, lines 2-6; Figure 5(A); and Ref. S18-20 in support of this rejection. However, the use of computers, databases, and the words "automatic operation of error cause and emergency support system" are not enough to establish an automated corrective action. ***Identifying a problem is not equivalent to commanding an automated corrective action***. The study results from Ikeda et al.'s designing department are logged in S20 of Ikeda et al. FIG. 5(A). Even if the manually generated studies of Ikeda et al. are "automatically" written to a knowledge database, there is nothing in Ikeda et al. to suggest that the recipient of the studies is capable of performing automated corrective action. For at least these reasons, claims 10 and 20 patentably define over Ikeda et al.

Claim 25 should also be allowable as setting forth patentable subject matter in and of itself. Claim 25 recites "the supervisory program has associated therewith a plurality of distinct recognized error conditions for which different sets of corrective commands associated with various automated corrective actions may be used in attempts to recover therefrom, and method further comprises, as part of step (d), the substeps of: (1) selecting at least a first course of possible automated corrective action, and generating, based at least in part thereon, a first set of commands to initiate the first course of automated corrective action, and (2) in the event that the recognized incoming error condition does not appear to have been corrected in response to the first set of commands, selecting a second course of possible automated corrective action, and thereafter generating, based at least in part thereon, a second set of commands to initiate the second course of automated corrective action." The Examiner cites column 6, lines 53-57; Figure 5(A); Ref. 70, 71; column 8, lines 1-10 in support of this rejection. However, the Examiner is mixing features of Ikeda's monitoring system 19 and monitoring system 8 which are at different facilities running on different computers in Ikeda et al.. The two monitoring systems of Ikeda et al. do not anticipate Claims 25 and 27. For at least these reasons, claim 25 patentably defines over Ikeda et al.

Claim 26 should also be allowable as setting forth patentable subject matter in and of itself. Claim 26 recites "(e) for a second incoming error condition that is so recognized in step (b), under the auspices of the supervisory program, accessing information associated with that recognized incoming error condition to enable the generation of at least a first set of automated corrective commands via the supervisory program distinct from the first set of automated corrective commands generated in response to the first incoming error condition recognized in step (b); and (f) under the auspices of the supervisory program, generating at least a first set of commands for initiating automated corrective action to be taken by a portion of the automated factory in an effort to resolve automatically the second recognized incoming error condition." The Examiner cites column 6, lines 47-53 and 64-67; Figure 5(A); Ref. 76; S18 in support of this rejection. However, Ikeda et al. at column 10, lines 43-63 still ***requires human intervention for many of the steps***. The Examiner asserts that there is "an application program running", but according to the sections previously cited by the Examiner, there is no single program on a single system disclosed in Ikeda et al. that performs all elements of claim 26 (e.g., see response regarding claims 25 and 27). For at least these reasons, claim 26 patentably defines over Ikeda et al.

Claim 27 should also be allowable as setting forth patentable subject matter in and of itself. Claim 27 recites "(g) in the event that first incoming error condition does not appear to have been corrected in response to the first set of commands generated automatically to recover from that first incoming error condition, sequentially thereafter automatically commanding the generation of a second set of commands associated with a second course of possible automated corrective action for that first incoming error condition, and (h) in the event that second incoming error condition does not appear to have been corrected in response to the first set of commands generated automatically to recover from that second incoming error condition, sequentially thereafter automatically commanding the generation of a second set of commands associated with a second course of possible automated corrective action for that second incoming error condition." The Examiner cites column 8, lines 1-10; Figure 5(A); and S18, S19 in support of this rejection. However, the Examiner is mixing features of Ikeda's monitoring system 19 and monitoring system 8 which are at different facilities running on different computers in Ikeda et al.. The two monitoring systems of Ikeda et al. do not anticipate Claims 25 and 27. For at least these reasons, claim 27 patentably defines over Ikeda et al.

CONCLUSION

In view of the foregoing, it is urged that the final rejection of claims 1-30 be overturned. The final rejection is in error and should be reversed. The fee set forth in 37 CFR 41.20(b)(2) is enclosed herewith. If there are any additional charges with respect to this Appeal Brief, or otherwise, please charge them to Deposit Account No. 09-0458.

Respectfully submitted,

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CLAIM APPENDIX

1. In an automated manufacturing facility for running automatic production and having a plurality of pieces of automated equipment designed to carry out certain tasks and having interactive control systems, an automated issue resolution (ISR) system for automatically attempting to resolve identified issues that interfere with automatic production, the ISR system comprising:

an automated issue resolution management (ISRM) system for directing attempts to automatically resolve issues including error conditions relating to the automated manufacturing facility, the ISRM system including a plurality of automated components whose operations the ISRM system is operable to coordinate, the components including

a first component for automatically checking whether a first reported issue brought to its attention is a recognized issue for which an automatic resolution appears to be available; and

a second component for commanding the taking of automated corrective action by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component.

2. An issue resolution system as in Claim 1, wherein the ISRM system further includes:

a third component for determining whether the automated corrective action appears to have resolved the recognized issue; and

a fourth component for logging whether the automated corrective action appears to have resolved the recognized issue.

3. An issue resolution system as in Claim 1, wherein the second component of ISRM system further includes:

a first subcomponent for determining whether an automated corrective action appears to be able to be taken at present; and a second subcomponent, in communication with the first subcomponent, for advising that an automated corrective action cannot be executed at present.

4. An issue resolution system as in Claim 3, wherein the second subcomponent of second component is operatively arranged for advising via a first message that an automated corrective action cannot be taken because of a condition specifically identified in the first message.

5. An issue resolution system as in Claim 4, wherein the second subcomponent of the second component is operatively arranged for advising via a second message that an automated corrective action cannot be taken because of at least one piece of automated equipment identified in the second message is not in automatic mode.

6. An issue resolution system as in Claim 1, wherein the ISRM system further includes at least a plurality of second components which are each respectively dedicated to attempting to resolve of a different recognized issue.

7. An issue resolution system as in Claim 1, wherein the second component of the ISRM system further includes a first subcomponent for providing at least first and second courses of possible automated corrective action, and a second subcomponent for commanding the taking of the first course of possible automated corrective action, and then the taking of the second course of possible automated corrective action if needed.

8. An issue resolution system as in Claim 1, further comprising:

a third component for determining whether the automated corrective action that was commanded appears to have resolved the recognized issue; and wherein

the third component includes a first subcomponent for providing a first message indicating whether the commanded automated corrective action appears to have resolved the issue, and

the second component includes

a first subcomponent for providing at least first and second possible automated corrective actions, and

a second subcomponent for commanding the taking of the first possible automated corrective action, and then commanding the taking of the second possible automated corrective action if needed, and

a third subcomponent for receiving the first message provided by third component and deciding whether the second subcomponent needs to command the taking of the second possible automated corrective action.

9. An issue resolution system as in Claim 8, wherein the ISRM system further includes:

at least a plurality of second components as set forth above, but with each being dedicated to attempting to resolve a distinct recognized issue; and

a command memory for providing information pertinent to possible corrective actions with respect to at least a plurality of distinct recognized issues; and

a command sequencer for helping generate at least first and second commands to initiate automated corrective actions in sequence as needed.

10. An issue resolution system as in Claim 8, wherein the ISRM system further comprising:

a fourth component for logging for future reference whether an automated corrective action that was commanded appears to have resolved the recognized issue;

a fifth component for providing a message indicating which automated corrective action that was commanded appears to have resolved the recognized issue; and

a sixth component, operatively arranged to receive a message from the fifth component, for logging for future reference at least part of the information contained in such received message.

11. In an automated manufacturing facility having interactive control systems which interface with pieces of automated equipment that carry out certain assigned tasks, an automated issue resolution (ISR) system for automatically attempting to resolve identified issues that interfere with automatic production, the ISR system comprising:

a first component for automatically checking whether a first issue reported to its attention is a recognized issue for which an automatic resolution appears to be available; and

a second component for automatically commanding the taking of automated corrective action by a portion of the automated manufacturing facility in response to a reported issue recognized by the first component.

12. An issue resolution system as in Claim 11, further comprising:

a third component for determining whether the automated corrective action that was commanded appears to have resolved the reported issue that was recognized; and

a fourth component for logging whether the automated corrective action that was commanded appears to have resolved the reported issue that was recognized.

13. An issue resolution system as in Claim 11, wherein the second component further includes:

a first subcomponent for determining whether an automated corrective action is able to be taken at present; and

a second subcomponent, in communication with the first subcomponent, for advising that an automated corrective action cannot be executed at present.

14. An issue resolution system as in Claim 13, wherein the second subcomponent of second component is operatively arranged for advising via a first message that an automated corrective action that is being commanded cannot be taken because of a condition specifically identified in the first message.

15. An issue resolution system as in Claim 14, wherein the second subcomponent of the second component is operatively arranged for advising via a second message that the automated corrective action being commanded cannot be taken because at least one piece of automated equipment is not in full automatic mode.

16. An issue resolution system as in Claim 1, wherein the ISR system further includes at least a plurality of like second components, but with each of such second components being dedicated to the resolution of a distinct recognized issue.

17. An issue resolution system as in Claim 11, wherein the second component of the ISR system further includes a first subcomponent for providing at least first and second courses of possible automated corrective action, and a second subcomponent for commanding the taking of the first course of possible automated corrective action, and then the taking of the second possible corrective action if needed.

18. An issue resolution system as in Claim 11, further comprising:

a third component for determining whether the automated corrective action that was commanded appears to have resolved the recognized issue; and wherein

the third component includes a first subcomponent for providing a first message indicating that the reported issue that was recognized no longer appears to be an issue, and

the second component includes

a first subcomponent for providing at least first and second possible courses of automated corrective action, and

a second subcomponent for automatically commanding the taking of the first course of possible corrective action, and then automatically commanding the taking of the second course of corrective action if needed, and

a third subcomponent for receiving the first message from the third component and deciding whether the second subcomponent needs to command the taking of the second course of automated corrective action.

19. An issue resolution system as in Claim 18, which further comprises:

at least a plurality of second components respectively dedicated to attempting to resolve a distinct recognized issue, with at least two of such second components each including –

a first subcomponent for providing a least first and second courses of possible corrective action for its distinct recognized issue, and

a second subcomponent for commanding the taking of the first course of possible corrective action, and then commanding the taking of the second course of corrective action if needed with respect to its distinct recognized issue, and

a command memory for providing information pertinent to a plurality of courses of possible corrective actions with respect to distinct recognized issues, and

a command sequencer for helping generate at least first and second commands to initiate automated corrective actions in sequence as needed.

20. An issue resolution system as in Claim 18, further comprising:

a fourth component for logging for future reference whether the automated corrective action that was commanded appears to have resolved the recognized issue;

a fifth component for providing a message indicating which automated corrective action that was commanded appears to have resolved the recognized issue; and a sixth component, operatively arranged to receive messages from the fifth component, for logging for future reference at least part of the information contained in such messages.

21. An automated method of managing automatic recoveries from error conditions in an automated factory environment that has automated computerized control systems which control and supervise the operations of automated equipment therein, the method comprising the steps of:

(a) installing a supervisory program for managing attempts to recover automatically from selected error conditions reported by at least one of the control systems in the automated factory;

(b) determining whether incoming error conditions received by the supervisory program are recognized as issues for which an automatic resolution appears to be available;

(c) for the first incoming error condition that is so recognized in step (b), under the auspices of the supervisory program, accessing information associated with the incoming recognized error condition to enable the generation of a first set of automated corrective commands; and

(d) under the auspices of the supervisory program, generating at least a first command for automated corrective action to be taken by a portion of the automated factory in an effort to resolve automatically the first recognized incoming error condition.

22. The automated method of recovering from error conditions as set forth in claim 21, further comprising the steps of:

(e) determining whether the automated corrective action taken appears to have resolved the recognized incoming error condition; and

(f) logging whether the automated corrective action which was taken appears to have resolved the recognized incoming error condition.

23. The automated method of recovering from error conditions as set forth in claim 22, further comprising the steps of:

(g) determining whether an automated corrective action is able to be taken at present; and

(h) advising that an automated corrective action cannot be executed at present.

24. The automated method of recovering from error conditions as set forth in claim 23, wherein step (h) includes:

advising at certain times via a first message that an automated corrective action cannot be taken because of a condition at least partially identified in the first message, and

advising at certain other times via a second message that an automated corrective action cannot be taken because of at least one piece of automation equipment is not in a required automatic mode.

25. The automated method of recovering from error conditions as set forth in claim 21, wherein the supervisory program has associated therewith a plurality of distinct recognized error conditions for which different sets of corrective commands associated with various automated corrective actions may be used in attempts to recover therefrom, and method further comprises, as part of step (d), the substeps of:

(1) selecting at least a first course of possible automated corrective action, and generating, based at least in part thereon, a first set of commands to initiate the first course of automated corrective action, and

(2) in the event that the recognized incoming error condition does not appear to have been corrected in response to the first set of commands, selecting a second course of possible automated corrective action, and thereafter generating, based at least in part thereon, a second set of commands to initiate the second course of

automated corrective action.

26. The automated method of recovering from error conditions as set forth in claim 25, further comprising the steps of:

(e) for a second incoming error condition that is so recognized in step (b), under the auspices of the supervisory program, accessing information associated with that recognized incoming error condition to enable the generation of at least a first set of automated corrective commands via the supervisory program distinct from the first set of automated corrective commands generated in response to the first incoming error condition recognized in step (b); and

(f) under the auspices of the supervisory program, generating at least a first set of commands for initiating automated corrective action to be taken by a portion of the automated factory in an effort to resolve automatically the second recognized incoming error condition.

27. The automated method of recovering from error conditions as set forth in claim 26, that further comprises the following further steps:

(g) in the event that first incoming error condition does not appear to have been corrected in response to the first set of commands generated automatically to recover from that first incoming error condition, sequentially thereafter automatically commanding the generation of a second set of commands associated with a second course of possible automated corrective action for that first incoming error condition, and

(h) in the event that second incoming error condition does not appear to have been corrected in response to the first set of commands generated automatically to recover from that second incoming error condition, sequentially thereafter automatically commanding the generation of a second set of commands associated with a second course of possible automated corrective action for that second incoming error condition.

28. The automated method of rec~~overing f~~rom error conditions as set forth in claim 21, wherein the supervisory program includes:

at least a plurality of sets of logic each dedicated to the resolution of a distinct recognized incoming error condition, with each such sets of logic providing a at least first and second courses of possible corrective action with respect to its distinct recognized error condition, and

the method further includes the steps of:

(e) for each distinct incoming recognized error condition, sequentially commanding the taking of the first course of possible corrective action for that error condition, and then commanding the taking of a second course of corrective action if the first course appears to have not resolved the error condition.

29. The automated method of recovering from error conditions as set forth in claim 28, wherein the supervisory program includes:

a command memory for providing information pertinent to a plurality of courses of possible corrective actions with respect to distinct recognized incoming error conditions, and

the method further includes the steps of:

(f) for at least a plurality of recognized incoming error conditions, logging whether the incoming error conditions appear to have been automatically corrected; and

(g) for at least a plurality of recognized incoming error conditions, logging which corrective commands out of a plurality of possible corrective commands appear to have been responsible for automatically effecting correction of the error conditions.

30. A computer program product, to be used in an automated factory environment that has automated computerized control systems which control and supervise the operations of the factory and pieces of automated equipment therein, for

implementing an automated method for managing automatic recoveries from error conditions, the software product comprising:

a storage medium readable by at least one processing circuit and storing instructions for execution by the processing circuit for performing the method comprising the steps of –

(a) installing a supervisory program for managing attempts to recover automatically from selected error conditions reported by at least one of the control systems in the automated factory;

(b) determining whether incoming error conditions received by the supervisory program are recognized as issues for which an automatic resolution appears to be available;

(c) for the first incoming error condition that is so recognized in step (b), under the auspices of the supervisory program, accessing information associated with the incoming recognized error condition to enable the generation of a first set of automated corrective commands; and

(d) under the auspices of the supervisory program, generating at least a first command for automated corrective action to be taken by a portion of the automated factory in an effort to resolve automatically the first recognized incoming error condition.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None